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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/874,876

06/05/2001

Ajit Kumar Reddy

Reddy 1

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09/21/2004

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EXAMINER

BURD, KEVIN MICHAEL

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/874,876

Applicant(s)

REDDY, AJIT KUMAR

Examiner

Kevin M. Burd

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-12 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 5 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 7/24/2001 is being considered by the examiner.

Drawings

2. The drawings were received on 1/7/2002. These drawings are disapproved.

The drawings are objected to because in figure 4, the equations for blocks 434 and 440 are identical. It is believed the components of the equation of block 440 should be added according to page 6, lines 12-14. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective

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action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 11 is objected to because of the following informalities: in line 3, the term "rector" should be "vector". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 6, 7, 9, 10 and 14-16 are rejected under 35 U.S.C. 102(a) as being anticipated by the instant application's disclosed prior art (specifically figure 1).

Regarding claim 1, the instant application's disclosed prior art shows an encoder in figure 1. The encoder includes a constellation mapper (generator) 130 that is responsive to an input bit stream to produce an impulse comprising an in-phase and a quadrature component (page 1, lines 26-30). A pair of filters 140, 50 (vector arithmetic structures – VAS) adapt a respective one of in-phase or quadrature components to produced shaped components (page 1, line 31 to page 2, line 1). The outputs are combined 160 to produce an encoded bit stream (page 2, lines 1-4).

Regarding claim 6, the constellation of symbols comprises carrierless amplitude and phase symbols (page 1, lines 10-11).

Regarding claim 7, the constellation of symbols comprises QAM encoded symbols (page 1, lines 10-11).

Regarding claim 9, the pair of filters implement a filtering operation 9figure 1).

Regarding claim 10, the instant application's disclosed prior art shows a method for using an encoder in figure 1. The encoder includes a constellation mapper (generator) 130 that is responsive to an input bit stream to produce an impulse comprising an in-phase and a quadrature component (page 1, lines 26-30). A pair of filters 140, 50 (vector arithmetic structures – VAS) adapt a respective one of in-phase or quadrature components to produced shaped components (page 1, line 31 to page 2, line 1).

Regarding claim 14, the constellation of symbols comprises pulse code modulated symbols (page 1, lines 13-16).

Regarding claim 15, as stated previously, a pair of filters 140, 50 (vector arithmetic structures – VAS) adapt a respective one of in-phase or quadrature components to produced shaped components (page 1, line 31 to page 2, line 1).

Regarding claim 16, the outputs are combined 160 to produce an encoded bit stream (page 2, lines 1-4).

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-4, 8, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the instant application's disclosed prior art in view of Corleto et al (US 5,668,749).

Regarding claim 2, the instant application's disclosed prior art discloses an encoder as stated above in paragraph 4. The prior art does not disclose the VAS comprises a plurality of vector registers and a vector arithmetic unit (VAU). Corleto discloses in figure 1 a plurality of registers for storing precomputed values from memories 20 and 32 and a multi-task arithmetic unit 50 for processing the values from the memories and selected vectors from the in-phase and quadrature registers 12 and 14. It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the teachings of Corleto into the instant application's disclosed prior art's encoder. Corleto discloses this method has reduced the complexity of the demodulation process thereby increasing efficiency and reducing hardware requirements (column 1, lines 55-65).

Regarding claims 3 and 4, the output of the multi-task arithmetic unit 50 is input to memory 32.

Regarding claim 8, figure 1 does not disclose a multiplication operation.

Regarding claims 11 and 12, the instant application's disclosed prior art discloses a method for using an encoder as stated above in paragraph 4. The prior art does not disclose the VAS comprises a plurality of vector registers and a vector arithmetic unit (VAU). Corleto discloses in figure 1 a plurality of registers for storing precomputed values from memories 20 and 32 and a multi-task arithmetic unit 50 for processing the values from the memories and selected vectors from the in-phase and quadrature registers 12 and 14. It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the teachings of Corleto into the instant application's disclosed prior art's encoder. Corleto discloses this method has reduced the complexity of the demodulation process thereby increasing efficiency and reducing hardware requirements (column 1, lines 55-65).

Allowable Subject Matter

6. Claims 5 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Kevin M. Burd
9/18/2004

**KEVIN BURD
PATENT EXAMINER**